REMARKS

This responds to the office action of 5 Nov 2007 which rejected all pending claims 1-17. New claim 18 has been added to better protect the invention.

35 USC 101 Rejection of Claims 1-10

The 35 USC 101 rejections of claims 1-10 in paragraph 3 of the office action have been overcome by revisions to independent claim 1. These changes should overcome the examiner's assertion that these claims were directed to nonstatutory subject matter. Amended independent claim 1 has been revised to recite a combination of hardware and software. It is hoped that the examiner will find these changes to satisfactory. Applicants submit that the examiner statement that claims 1 comprises only software is in error. The examiner obviously did not appreciate that the underlying platform for the software is any PC or UNIX machine, where Java 2EE-JVM runs. This same concept could be used in other multi-threaded applications using other programming languages such as C++ on any PC or UNIX platform.

35 USC 102(e) Rejection

Paragraph 5 of the office action rejected claims 1, 3, 5, 8, 11, 13, and 15 under 35 USC 102 (e) as being anticipated by Carlson et al. 6,842,898. Claims 1, 3, 5, 8, 11, 13, and 15 are amended to better distinguish them from Carlson. Amended independent apparatus claim 1 recites, in essence, that that the claimed registration method is optional for monitoring by the class. This differs from Carlson, which does not provide thread monitoring on an optional basis by the thread that is monitored.

The disclosed invention comprises a generic and reusable type of the thread monitor. The thread monitor has no knowledge of the owner process or other thread functionalities. The invention provides a loose coupling between a monitored thread and the thread monitor because the services provided by the threaded monitor are optional for a given thread. A designer can decide which individual threads should take advantage of the thread monitor and which should not. The thread monitor will not

monitor all threads by default, or become an overhead for threads that do not need to use the thread monitor.

Re: claim 1: The Carlson patent does not disclose an **optional** thread registration method to register a thread for monitoring by the class. This is disclosed in our application. Our invention has been designed to be generic. It is up to the user to decide whether or not to use the thread monitoring for a given thread. The thread monitor does not force all of the threads to register with it, so the functionality is optional and also designed in a generic way.

Re: claim 3: Carlson does not cover the stop thread monitoring method to terminate monitoring of all threads registered for monitoring by the class. The examiner asserts that the Carlson patent covers this in column 5 line 66 to column 6 line 3. This is incorrect since Carlson does not provide this feature. This part of Carlson refers to the Cleanup class that kills the threads that are having problems. This is irrelevant since it does not stop the thread monitoring method from monitoring the registered threads.

Re: claim 5. The applicants traverse the examiner's assertion that Carlson teaches the thread registration method comprising the steps of a thread alive check registration method invoked by a thread to register for monitoring by the class wherein the monitoring comprises the step of periodically verifying that the thread is still alive. The applicants assert that Carlson does not disclose the method step recited by claim 5. Carlson also does not disclose an **optional** thread registration for the thread alive check.

Re: claim 8. The examiner asserts (comment 9) that Carlson teaches that the thread monitor supervisor is instantiated within a main thread in column 4 lines 46-59. The applicants disagree and assert that the described text is a description of what threads are.

Re: claim 11. Claim 11 is similar to claims 1 and 8. Claim 11 is directed to an (optional) registering of the threads and the instantiating of the monitor in one thread of the same process. This is not disclosed by Carlson.

Re claim 13: Dependent claim 13 should be allowable at least in view of its dependency on allowable independent claim 11.

Re: claim 15: This claim is directed to instantiating the supervisor in a main thread of the process. This claim is similar to claim 8, and is not disclosed by Carlson.

35 USC 103 Rejections

Claims 2, 9, 10, 16, and 17, were rejected under 35 USC 103(a) in view of Carlson. Applicants traverse these rejections.

Re: claim 2, the examiner asserted that Carlson does not explicitly teach that the thread monitor class further includes un-registration to remove a prior registration of a thread. The examiner then stated that it would have been obvious to one skilled in the art to include a thread un-registration method since it is well known in the art that threads can complete their execution once the task is complete. The applicants traverse and reply that Carlson does not cover this un-registering the thread from the thread monitor. The examiner asserts that that this would have been obvious when the invention was made. The applicants disagree and assert that the modification of Carlson proposed by the examiner is not obvious to them.

Re: claims 9 and 10, the examiner stated that Carlson does not explicitly teach that the thread monitoring supervisor is operable to restart an inner operable thread or restart the process that includes an inoperable thread. The examiner stated that it would have been obvious to one skilled in the art to modify Carlson to cover claims 9 and 10. The applicants traverse this assertion and assert that the modification proposed by the examiner and would not be obvious to applicants.

Re: claims 16 and 17, these claims need not be further discussed since they are similar to claims 9 and 10 which have been priorly discussed and maintained not to be anticipated or made obvious by the cited art.

The examiner rejected claims 4, 6, 7, 12, and 14 under 35 USC 103(a) in view of the combination of Carlson taken with Bower patent 7,051,331. The applicants traverse this rejection.

Re: claim 4: The examiner asserts that Bower discloses the Heart Beat method. However, the Bower patent discloses the monitoring of a lower priority process by a

higher priority process, not thread monitoring. Process monitoring is different than thread monitoring. The present invention is not directed to process monitoring.

Re: claim 6: the examiner asserts that the Bower Heart Beat method covers applicants' thread poll registration. Applicants disagree. The thread poll capability executes some functionality of the given thread, which is more than just heart beating. The claimed invention provides complete freedom in a generic way for the thread designer to implement its "poll" method. It is up to the thread designer to figure out what needs to be checked to determine if the thread is functioning normally and respond back to the thread monitor when the poll method is called.

Re: claim 7: This is the registration part of the Heart Beat method and is similar to claim 4.

Re: claim 12: This claim is directed to registering the Heart Beat thread. It need not be further discussed since it is comparable to claim 4, and is therefore distinguishable from the prior art for the same reasons discussed with respect to claim 4.

Re: claim 14: This claim is directed to registering the polling thread and need not be further discussed since it is similar to claim 6 and is distinguishable from the cited art for the same reasons priorly discussed for claim 6.

New claim 18 describes a generic and reusable type of thread monitor. The disclosed thread monitor has no knowledge of the owner process or functionalities of other threads. This distinguishes the disclosed invention from Carlson.

The applicants wish to point out that in the present invention; there is a loose coupling between a thread that may be monitored and the thread monitor. In view of this, the service of the thread monitor is optional for a given thread. A designer can decide which individual threads should take advantage of the thread monitor and which should not. The thread monitor does not monitor all threads by default, or become an overhead for threads that do not need to use the thread monitor. This capability is not disclosed by any of the cited art.

There is no need to discuss the dependent claims in further detail since they are believed to be allowable because of their dependency on independent claim 1 or independent claim 11 both of which are believed to be allowable as above discussed.

The examiner is respectfully requested to call the undersigned if the prosecution of the application can be expedited by so doing.

Respectfully submitted,

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